

ATTORNEY DOCKET NO. WEST14-00018

U.S. SERIAL NO. 09/839,509

PATENT

REMARKS

Claims 1-20 are pending in the present application.

Reconsideration of the claims is respectfully requested.

Applicants note that while the Office Action asserts that new ground(s) of rejection are entered therein (Paper No. 20050429, pages 12-13), the rejections are identical to those in the prior Office Action.

35 U.S.C. § 102 (Anticipation)

Claims 10-13 and 17 were rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent No. 6,091,729 to *Dove*. This rejection is respectfully traversed.

A claim is anticipated only if each and every element is found, either expressly or inherently described, in a single prior art reference. The identical invention must be shown in as complete detail as is contained in the claim. MPEP § 2131 at p. 2100-73 (8th ed. rev. 2 May 2004).

As previously noted, independent claim 10 recites that the high tier bus comprises one or more serial links. Such a feature is not found in the cited reference. The cited cell bus disclosed in *Dove* includes eight parallel bits or signal lines. *Dove*, column 4, lines 24-27, column 7, lines 47-48.

The Office Action states:

... see FIG. 5, each cell bus/link 550 transmits cells serially, thus, each link/bus 550 is a serial link ...

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Paper No. 20050429, page 3. However, such an interpretation of “serial link” (that is, that some quantum of data, no matter how large, is transmitted serially over the link) is contrary to the ordinary and accepted meaning of the term.

As an initial matter, it should be noted that the cited reference provides no support for the interpretation proffered in the Office Action. *Dove* does not use the term “serial” anywhere therein, and particularly not in connection with cell bus 550.

The interpretation is also inconsistent with the specification of the subject application, which differentiates low tier cell bus 410 from high tier serial links 415.

The interpretation is also inconsistent with the ordinary usage of the term. U.S. Patent No. 6,760,327 to *Manchester et al*, for example, specifies that serial link 76 includes a single data signal. *Manchester et al*, column 8, lines 52–53. The customary meaning of, for instance, “serial interface” or “serial input/output” also make clear that “serial” refers to bit-by-bit data transfer. See, e.g., R.F. Graf, *Modern Dictionary of Electronics* (Newnes, 7th ed. 1999), p. 681; *McGraw-Hill Dictionary of Scientific and Technical Terms* (McGraw Hill, 6th ed. 2003), p. 1902 (copies attached).

Dove transmits entire cells (53 bytes) of data concurrently, NOT bitwise, and therefore does NOT comprise a “serial link.”

Therefore, the rejection of claims 10–13 and 17 under 35 U.S.C. § 102 has been overcome.

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35 U.S.C. § 103 (Obviousness)

Claims 1–4 and 20 were rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,760,327 to *Manchester et al* in view of U.S. Patent No. 6,560,219 to *Tabu et al*. Claim 5 was rejected under 35 U.S.C. § 103(a) as being unpatentable over *Manchester et al* in view of *Tabu et al* and further in view of U.S. Patent No. 6,512,769 to *Chui et al*. Claim 6 was rejected under 35 U.S.C. § 103(a) as being unpatentable over *Manchester et al* in view of *Tabu et al* and further in view of U.S. Patent No. 6,047,348 to *Lentz et al*. Claims 7–8 were rejected under 35 U.S.C. § 103(a) as being unpatentable over *Manchester et al* in view of *Tabu et al*. Claim 9 was rejected under 35 U.S.C. § 103(a) as being unpatentable over *Manchester et al* in view of *Tabu et al* and further in view of U.S. Patent No. 5,355,090 to *Pajowski et al*. Claims 14–16 were rejected under 35 U.S.C. § 103(a) as being unpatentable over *Dove*. Claims 18–19 were rejected under 35 U.S.C. § 103(a) as being unpatentable over *Manchester et al* in view of *Tabu et al* and further in view of U.S. Patent No. 5,416,776 to *Panzarella et al*. These rejections are respectfully traversed.

In *ex parte* examination of patent applications, the Patent Office bears the burden of establishing a *prima facie* case of obviousness. MPEP § 2142, p. 2100-128 (8th ed. rev. 2 May 2004). Absent such a *prima facie* case, the applicant is under no obligation to produce evidence of nonobviousness. *Id.*

To establish a *prima facie* case of obviousness, three basic criteria must be met: First, there must be some suggestion or motivation, either in the references themselves or in the knowledge

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generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure. *Id.*

Independent claims 1 and 20 each recite that the low tier comprises a cell-based bus capable of lower aggregate traffic rates (up to approximately two gigabits per second), while the high tier comprises one or more serial links capable of higher aggregate traffic rates (up to approximately twenty gigabits per second). Such a feature is not found in the cited references. *Manchester et al* teaches a low-speed TDM bus 70 comprising point-to-point serial links and a high-speed ATM (cell-based) bus 72. *Manchester et al*, column 8, lines 19–47. *Manchester et al* specifically states that the traffic rates on TDM bus 70 are slower than those on ATM bus 72. *Manchester et al*, column 8, lines 21–23. The structure disclosed in *Manchester et al* is thus opposite that recited in the claims. *Tabu et al* discloses a network of small, medium and large cell switches 3100, 2100 and 1100 supporting switching rates of 156 Mbps, 2 Gbps and 20 Gbps, respectively. *Tabu et al* contains no teaching or suggestion of any of the switches 1100, 2100 and 3100 including both a cell bus and a serial link, or of a serial link supporting a 2 Gbps data rate. Neither *Manchester et al* nor *Tabu et al* provide any motivation or incentive for modifying the teachings of *Manchester et al* to implement a lower speed cell bus and a higher speed serial link, rather than vice versa.

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Claims 2–9 and 18–19 depend from claim 1, and therefore include the limitation(s) identified above. Such a feature or combination of features is also not found in the remaining cited references.

Independent claim 10 recites that the high tier bus comprises one or more serial links. Claims 14–16 depend from claim 10, and therefore include the limitation(s) identified above. Such a feature is not found in the cited reference. As discussed above, the cited cell bus disclosed in *Dove* is not a “serial link” as asserted in the Office Action.

Therefore, the rejection of claims 1–9, 14–16 and 18–19 under 35 U.S.C. § 103 has been overcome.

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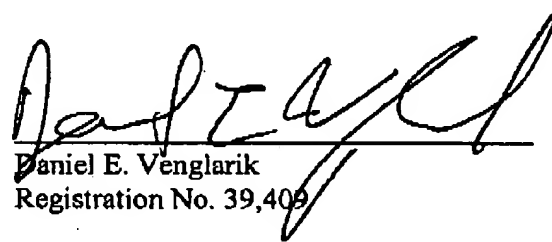
If any issues arise, or if the Examiner has any suggestions for expediting allowance of this Application, the Applicant respectfully invites the Examiner to contact the undersigned at the telephone number indicated below or at *dvenglarik@davismunck.com*.

The Commissioner is hereby authorized to charge any additional fees connected with this communication or credit any overpayment to Deposit Account No. 50-0208.

Respectfully submitted,

DAVIS MUNCK, P.C.

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sequential lobing — serial programming

sequential lobing — A direction-determining technique utilizing the signals of overlapping lobes existing at the same time.

sequential logic — 1. A circuit arrangement in a computer in which the output state is determined by the previous state of the input. *See also* combinatorial logic. 2. Part of a circuit in which the output values are a function of the inputs and data stored within the circuit.

sequential logic element — A device that has one or more output channels and one or more input channels, all of which have discrete states, such that the state of each output channel depends on the previous states of the input channel.

sequential operating connector — A form of connector that has two or more groups of contacts that open and close in a predetermined sequence. For example, a connector that is designated for use with ground connections, power distribution, and signal circuits. Operates in such a way that when the connector is closed, the ground contacts close first, power contacts second, and signal contacts last. This sequence is reversed when the connector is opened.

sequential operation — The carrying out of operations one after the other.

sequential relay — A relay that controls two or more sets of contacts in a predetermined sequence.

sequential sampling — Sampling inspection in which the decision to accept, reject, or inspect another unit is made following the inspection of each unit.

sequential scan — A system of TV scanning in which each line of the raster is scanned sequentially.

sequential scanning — In television, rectilinear scanning in which the distance from center to center of successively scanned lines is equal to the nominal line width.

sequential switcher — A device that automatically permits the viewing of pictures from a number of CCTV cameras on one CCTV monitor in a selected sequence.

sequential timer — A timer in which each interval is initiated by the completion of the preceding interval. All intervals may be independently adjusted.

sequential with memory — *See* SECAM.

serial — 1. Pertaining to time-sequential transmission of, storage of, or logical operations on the parts of a word in a computer — the same facilities being used for successive parts. 2. The technique for handling a binary data word that has more than one bit. The bits are acted upon one at a time, analogous to a parade passing a review point. 3. Typically refers to a port on a computer for transmitting one bit at a time. Modems and mice typically connect to a serial port.

serial access — 1. Pertaining to transmission of data to or from storage in a sequential or consecutive manner. 2. Pertaining to the process in which information is obtained from or placed into storage with the time required for such operations dependent on the location of the information most recently obtained or placed in storage. *See also* random access.

serial adder — A device in which additions are performed in a series of steps: the least significant addition is performed first, and progressively more significant additions are performed in order until the sum of the two numbers is obtained.

serial arithmetic unit — In a computer, a unit in which the digits are operated on sequentially. *See also* parallel arithmetic unit.

serial bit — Pertaining to computer storage in which the individual bits making up a word appear in time sequence.

serial computer — A computer having a single arithmetic and logic unit.

serial counter — Also called ripple-through counter. A counter in which each flip-flop cannot change state until after the preceding flip-flop has changed state; relatively long delays after an input pulse is applied to the counter can occur before all flip-flops reach their final states.

serial data — Data transmitted sequentially, one bit at a time.

serial digital computer — A computer in which the digits are handled serially. Mixed serial and parallel machines are frequently called serial or parallel, according to the way the arithmetic processes are performed. An example of a serial digital computer is one that handles decimal digits serially, although the bits that comprise a digit might be handled either serially or in parallel. *See also* parallel digital computer.

serial interface — 1. A data channel that transfers digital data (1s and 0s) in a serial fashion, one bit after another. Serial interfaces save space by requiring fewer lines compared with parallel interfaces, but at the sacrifice of data transfer speeds. 2. A port that sends or receives the eight bits in each byte one by one, much like beads on a string. Printers located far from a computer usually require a serial interface.

serial I/O — A method of data transfer between a computer and a peripheral device in which data is transmitted for input to the computer (or output to the device) bit by bit over a single circuit.

serialize — To convert from parallel-by-bit to serial-by-bit.

serially reusable routine — A computer routine in main storage that can be used by another task following conclusion of the current use.

serial memory — 1. A memory in which information is stored in series and reading or writing of information is done in time sequence, as with a shift register. Compared with a RAM, a serial memory has slow to medium speed and lower cost. *See* sequential-access memory. 2. A memory whose contained data is accessible only in a fixed order, beginning at some prescribed reference point. Data in any particular location is not available until all data ahead of that location has been read. Such a memory is inherently slow compared with a random-access memory.

serial mode — A type of computer operation that is performed bit by bit, generally with the least significant bit handled first. Read-in and readout are accomplished bit after bit by shifting the binary data through the register.

serial operation — 1. In a digital computer, information transfer such that the bits are handled sequentially, rather than simultaneously as they are in parallel operation. Serial operation is slower than parallel operation, but it is accomplished with less complex circuitry. 2. Type of information transfer within a programmable controller whereby the bits are handled sequentially rather than simultaneously, as they are in parallel operation. Serial operation is slower than parallel operation for equivalent clock rate. However, only one channel is required for serial operation.

serial-parallel — Having the property of being partially serial and partially parallel.

serial port — A method of data communication in which bits of information are sent consecutively through one wire.

serial printer — A device that can print characters one at a time across a page.

serial processing — The sequential or consecutive execution of more than one process into a single device such as a channel or processing unit. Opposed to parallel processing.

serial programming — Programming of a digital computer in such a manner that only one arithmetical or logical operation can be executed at one time.

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On the cover: Representation of a fullerene molecule with a noble gas atom trapped inside. At the Permian-Triassic sedimentary boundary the noble gases helium and argon have been found trapped inside fullerenes. They exhibit isotope ratios quite similar to those found in meteorites, suggesting that a fireball meteorite or asteroid exploded when it hit the Earth, causing major changes in the environment. (Image copyright © Dr. Luann Becker. Reproduced with permission.)

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1902

sequential selection

serial transfer

or all sequential positions have been searched. (si'kwen-chal 'sorch)

sequential selection [COMMUN] The selection of the elements of a message (such as letters) from a set of possible elements (such as the alphabet), one after another. (si'kwen-chal si'lek-shan)

sequential system See sequential color television. (si'kwen-chal 'sis-tam)

sequential trials [STAT] The outcome of each trial is known before the next trial is performed. (si'kwen-chal 'triz)

sequestering agent [CHEM] A substance that removes a metal ion from a solution system by forming a complex ion that does not have the chemical reactions of the ion that is removed; can be a chelating or a complexing agent. (si'kwen-ta-rig, a-jant)

sequestrum [MED] A piece of dead or detached bone within a cavity, abscess, or wound. (si'kwen-trem)

Sequoia [BOT] A genus of conifers having overlapping, scalelike evergreen leaves and vertical grooves in the trunk; the giant sequoia (*Sequoia gigantea*) is the largest and oldest of all living things. (si'kwol-yo)

serac [HYD] A sharp ridge or pinnacle of ice among the cravasses of a glacier. (sa-rak)

serandite [MINERAL] $\text{Na}(\text{Mn}, \text{Ca})_2\text{Si}_2\text{O}_6(\text{OH})$ A rose-red mineral composed of a basic silicate of manganese, lime, potash, and soda occurring in monoclinic crystals. (ser-an,dit)

Serber potential [NUC PHYS] A potential between nucleons, equal to $\frac{1}{2}(1 + M)V(r)$, where $V(r)$ is a function of the distance between the nucleons, and M is an operator which exchanges the spatial coordinates of the particles but not their spins (corresponding to the Majorana force). (sar-bar po-ten-chal)

sero [ECOL] A temporary community which occurs during a successional sequence on a given site. (sir)

serotin [METEOROL] The doubtful phenomenon of fine rain falling from an apparently clear sky, the clouds, if any, being too thin to be visible; frequently, fine rain is observed with a clear sky overhead, but clouds to windward clearly indicate the source of the drops. (sa-rin)

serge [TEXT] Twill weave with the diagonal prominent on both sides of the cloth. (sarj)

Sergeantidae [INV ZOO] A family of decapod crustaceans including several species of prawns. (sar'jer-ta,da)

serial [COMPUT SCI] Pertaining to the internal handling of data in sequential fashion. [IND ENG] An element or a group of elements within a series which is given a numerical or alphabetical designation for convenience in planning, scheduling, and control. (sir-e-al)

serial-access [COMPUT SCI] 1. Pertaining to memory devices having structures such that data storage sites become accessible for read/write in time-sequential order; circulating memories and magnetic tapes are examples of serial-access memories. 2. Pertaining to a particular process or program that accesses data items sequentially, without regard to the capability of the memory hardware. 3. Pertaining to character-by-character transmission from an on-line real-time keyboard. (sir-e-al 'ak-ses)

serial addition [COMPUT SCI] An arithmetic operation in which two numbers are added one digit at a time. (sir-e-al a'dish-an)

serial bit [COMPUT SCI] Digital computer storage in which the individual bits that make up a computer word appear in time sequence. (sir-e-al bit)

serial communications [COMMUN] The transmission of digital data over a single channel. (sir-e-al ka-myū-nā-kā-shanz)

serial correlation [STAT] The correlation between values of events in a time series and those values ahead or behind by a fixed amount in time or space or between parts of two different time series. (sir-e-al kōr-a-lā-shan)

serial digital computer [COMPUT SCI] A digital computer in which the digits are handled serially, although the bits that make up a digit may be handled either serially or in parallel. (sir-e-al dij-ō-dal kām'pyūd-ar)

serial dot character printer [COMPUT SCI] A computer printer in which the dot matrix technique is used to print characters, one at a time, with a movable print head that is driven back

serial file [COMPUT SCI] The simplest type of file organization, in which no subsets are defined, no directories are provided, no particular file order is specified, and a search is performed by sequential comparison of the query with identifiers of all stored items. (sir-e-al 'fil)

serial homology [ZOO] The similarity between the members of a single series of structures, such as vertebrae, in an organism. (sir-e-al ho'mil-ō-jē)

serial input/output [COMPUT SCI] Data that are transmitted into and out of a computer over a single conductor, one bit at a time. (sir-e-al 'in,pūt 'aūt,pūt)

serial interface [COMPUT SCI] A link between a microcomputer and a peripheral device in which data is transmitted over a single conductor, one bit at a time. Also known as serial port. (sir-e-al 'in-tar,fis)

serialize [COMPUT SCI] To convert a signal suitable for parallel transmission into a signal suitable for serial transmission, consisting of a sequence of bits. (sir-e-al,iz)

serial learning [PSYCH] The type of association in verbal learning involved in learning the alphabet; studied in the laboratory by giving the subject serial lists to learn, where each list would consist of a number of unrelated items. (sir-e-al 'lern-ing)

serially ordered set See linearly ordered set. (sir-e-al 'lōrd-ard 'set)

serially reusable [COMPUT SCI] An attribute possessed by a program that can be used for several tasks in sequence without having to be reloaded into main memory for each additional use. (sir-e-al re'yū-zā-bal)

serial memory [COMPUT SCI] A computer memory in which data are available only in the same sequence as originally stored. (sir-e-al 'mem-ri)

serial observation [OCEANOGR] The procurement of water samples and temperature readings at a number of levels between the surface and the bottom of an ocean. (sir-e-al 'āb-zar'vā-shan)

serial operation [COMPUT SCI] The flow of information through a computer in time sequence, using only one digit, word, line, or channel at a time. (sir-e-al 'lōp-ōrā-shan)

serial order See linear order. (sir-e-al 'lōrd-ar)

serial-parallel [COMPUT SCI] 1. A combination of serial and parallel; for example, serial by character, parallel by bits comprising the character. 2. Descriptive of a device which converts a serial input into a parallel output. (sir-e-al 'par-a-lel)

serial-parallel conversion [COMPUT SCI] The transformation of a serial data representation as found on a disk or drum into the parallel data representation as exists in core. (sir-e-al 'par-a-lel kām'vā-rā-shan)

serial port See serial interface. (sir-e-al 'pōrt)

serial printer [GRAPHICS] 1. A typewriter, or similar device, in which the paper or printing device moves back and forth, step by step to successive positions, to print one character at a time. Also known as character printer. 2. A printer that is designed to be connected to a serial port of a computer. (sir-e-al 'prin-ter)

serial processing [COMPUT SCI] Processing items in a collection of data in the order that they appear in a storage device, in contrast to sequential processing. [PSYCH] The processing of several pieces of information one at a time, in succession. (sir-e-al 'prō-ses-ing)

serial processor [COMPUT SCI] A computer in which data are handled sequentially by separate units of the system. (sir-e-al 'prō-ses-ar)

serial programming [COMPUT SCI] In computers, programming in which only one operation is executed at one time. (sir-e-al 'prō-grām-ing)

serial sampling [STAT] A method of gathering samples by a set pattern, such as a grid, to ensure randomness. (sir-e-al 'sām-plig)

serial station [OCEANOGR] An oceanographic station consisting of one or more Nansen casts. (sir-e-al 'stā-shan)

serial storage [COMPUT SCI] Computer storage in which time is one of the coordinates used to locate any given bit, character, or word; access time, therefore, includes a variable waiting time, ranging from zero to many word times. (sir-e-al 'stōr-ij)

serial transfer [COMPUT SCI] Transfer of the characters of an element of information in sequence over a single path in a